E 6095

M.E. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2005.

Computer Science and Engineering

Elective

CP 042 — ADVANCED NETWORKS

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the advantages of fiber optics over copper wire?
2. Define the term DWDM.
3. List out the design goals of ATM.
4. What do you mean by "Meta Signaling"?
5. List out the problems that can be solved using LANE.
6. What are all the Principles of Control flows in Multi Protocol Over ATM?
7. Collision detections on wireless networks are rarely done. Why?
8. List out the factors to be considered while building Multimedia Networks.
9. What are the disadvantages Multi hop networks?
10. List out the Routing and switching elements for optical networks.

PART B — (5 × 16 = 80 marks)

11. (i) Compare circuit switched networks with packet switched networks. (4)

    (ii) Explain about ISDN Channels and Access Interfaces. (6)

    (iii) Explain about ISDN Functional Devices and Reference points. (6)

12. (a) (i) What are cell networks? Give the format of a cell. (4)

    (ii) Write a note on ATM multiplexing. (4)

    (iii) Explain the network architecture of ATM with neat diagrams. (8)

Or

(b) (i) Write short notes on Addressing in ATM networks. (4)

(ii) Explain the functions of various layers in ATM model with neat diagrams. Compare ATM model with OSI reference model. (12)

13. (a) (i) Explain the various ATM LAN architectures with neat diagram. (8)

(ii) Explain the LANE elements and connection types in detail. (8)

Or

(b) (i) Explain how to carry IP traffic over an ATM based network in detail. (10)

(ii) Explain the various possibilities for carrying Frame Relay over ATM. (6)

14. (a) (i) Explain the CSMA/CA access method for wireless LANs with neat flow diagram. (4)

(ii) Explain the following Spread Spectrum technologies in wireless LANs :

(1) Frequency Hopping Spread Spectrum.

(2) Direct Sequence Spread Spectrum. (12)

Or

(b) (i) Explain the frame structure of IEEE 802.11 standard. (4)

(ii) Explain the various services that must be provided by wireless LANs according to the IEEE 802.11 standard. (8)

(iii) Give the functions of WAP gateway. (4)

15. (a) Illustrate the principle of signal propagation through optical fibers. Differentiate between single mode and multimode fibers. Describe the construction and operation of fiber optic ring with active and passive repeaters. (16)

Or

(b) (i) What is the need for RTP? (4)

(ii) Write a note on VoIP gateways. (6)

(iii) Write a note on Internet Telephony. (6)
